

Student Name: \_\_\_\_\_

Subject Teacher: \_\_\_\_\_



# **Year 8 2015 Semester 1 Exam**

## **Mathematics**

**Reading Time: 5 Minutes**

**Writing Time: 65 Minutes**

**All answers are to be placed on the answer sheet.**

**A netbook is needed to complete this exam.**

**A scientific calculator is allowed**

**Each part to each question is worth 1 mark.**

**Paper will be given to you for working out.**

### **Formulae**

**Area of circle :**  $A = \pi r^2$

**Circumference of a Circle:**  $C = 2r\pi$

**Question 1**

(a) Find the product of 261 and 6.

(b) Find the quotient of 336 and 8.

(c) Find the sum of 821 and 54.

(d) Find the difference between 167 and 53

**Question 2**

Write a negative or positive number suggested by each of the following.

(a) 5000 metres below sea level

(b) up 9 floors

**Question 3**

State the opposite of:

(a) north 5 km

(b) -61

**Question 4** (2)

Write a less than < or greater than > sign between each of the following pairs of numbers to make a true statement.

(a) -31 \_\_\_ 18

(b) 82 \_\_\_ -5

**Question 5** (1)

Arrange the following numbers in order from smallest to largest.

-8, 15, 0, -4, 3

**Question 6** (2)

Evaluate:

(a)  $-11 + (-8)$

**(b)**  $-7 + (+18)$

**Question 7** (1)

Evaluate:

$$+3 + (-5) + (-4)$$

**Question 8** (2)

Evaluate:

(a)  $-6 - (-28)$

(b)  $-15 - (+21)$

**Question 9** (3)

Evaluate:

(a)  $5 - 12$

(b)  $-7 + 15$

(c)  $-4 - 36$

**Question 10** (1)

Evaluate:

$$5 - 11 + 18$$

**Question 11** (3)

Find the following products.

(a)  $4 \times -8$

(b)  $-7 \times -5$

**Question 12** (2)

Evaluate the following.

(a)  $5 \times -8 \times -2$

(b)  $-7 \times -2 \times -5$

**Question 13** (3)

Find the following quotients.

(a)  $-44 \div -4$

(b)  $30 \div -6$

**Question 14** (1)

Find:

$$\frac{-64}{8}$$

**Question 15** (1)

Evaluate:

$$88 \div 11 \times -2 - 15$$

**Question 16** (1)

Write the repeating decimal 0.485 485 48... using shorthand notation.

**Question 17** (1)

Use your calculator to convert the mixed number to an improper fraction.

$$32\frac{8}{11}$$

**Question 18** (1)

Use your calculator to find  $\frac{523}{24}$  as a mixed number.

**Question 19** (2)

Re-order the following list of numbers so that they are in ascending order (i.e. smallest to largest).

$$5\frac{1}{2}, 5.632, 5\frac{2}{3}, 5.326, 5\frac{1}{5}, 5\frac{3}{4}, 5.236$$

**Question 20** (1)

Use the  $\sqrt{\quad}$  key on your calculator to work out:

$$\sqrt{361}$$

**Question 21** (1)

Use your calculator to work out the following and round your answer to four decimal places.

$$\frac{25}{7}$$

**Question 22** (1)

Use your calculator to work out  $(2.3156)^3$  and round your answer to four decimal places.

**Question 23** (1)

**Choose the correct answer. Multiple Choice**

$\sqrt{8.05}$  correct to two decimal places is:

**A** 2.84

**B** 2.83

**C** 4.02

**D** 4.03

**E** 2.68

**Question 24** (1)

Write  $h \times h \times h \times h \times h \times h \times h$  in index form.

**Question 25** (1)

Write  $2^3 s^5$  in expanded form.

**Question 26** (1)

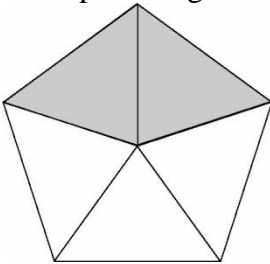
**Choose the correct answer. Multiple choice**

The basic numeral for  $3^4$  is:

- A 9
- B 12
- C 27
- D 54
- E 81

**Question 27** (1)

What percentage of the pentagon is shaded?



- A 10%
- B 20%
- C 40%
- D 80%
- E 100%

**Question 28** (3)

Convert the following to fractions in their simplest form.

(a) 11%

(b) 28%

**Question 29** (4)

Convert the following to **mixed fractions** in their simplest form.

(a) 470%

**Question 30** (2)

Convert the following to decimals.

(a) 7%

(b) 25 %

(c) 29.3%

**Question 31** (2)

Convert the following to percentages.

(a)  $\frac{29}{100}$

(b)  $\frac{3}{8}$

(c)  $2\frac{1}{5}$

(d) 0.5

(e) 4.02



**Question 32** (1)

22 % of the students at a school ride to school. What percentage of the students do not ride to school?

**Question 33** (1)

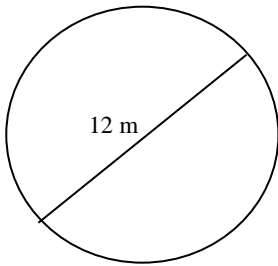
In a class of 25, there are 13 boys. What percentage of the class are boys?

**Question 34** (1)

Express 90 as a percentage of 32, giving the answer in decimal form, correct to two decimal places.

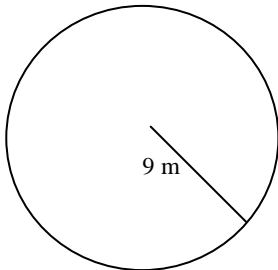
**Question 36** (2)

Calculate the circumference of the circle below. Write your answer correct to one decimal place.



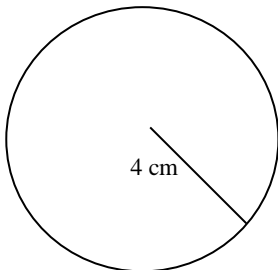
**Question 37** (2)

Calculate the circumference of the circle below.



**Question 38** (2)

Find the area of the following figure.



**Question 39** (2)

If the height in centimetres of the shortest member of your class is  $h$ , write an expression for:

(a) the height of someone who is 10 cm taller than the shortest person

(b) the height of the shortest person's Dad who is twice as tall.

**Question 40** (3)

Write these expressions without division signs, multiplication signs or brackets.

(a)  $3 \times c$

(b)  $2 \times a - 5 \times b$

(c)  $6 \times p \div (7 \times q)$

(d)  $(3 \times r \times s) - t \times 5 \times s$

**Question 41** (3)

Substitute  $m = 3$  and  $n = 4$  into the following and evaluate.

(a)  $5m$

(b)  $\frac{6m}{n}$

(c)  $4m + 2n =$

